ing at 6 hours after injection, the TCA non-precipitable fraction was smaller in animals administered material in polymerized liposomes, as compared to material administered in conventional liposomes and significantly less than when material was administered in solution.

Variations and modifications of the compositions, methods of preparing the compositions, and methods of using the compositions will be obvious to those with ordinary skill in the art. It is intended that all of these variations and modifications be included within the scope of the appended claims.

We claim:

1. A method of delivering an antigen to the gastrointestinal tract of an animal which comprises orally administering to said animal polymerized liposomes comprising a phospholipid bilayer having covalently bonded phospholipids therein, an aqueous core and an antigen encapsulated in said polymerized liposome.

2. A method of orally delivering a vaccine to the gastrointestinal tract of an animal which comprises orally administering to said animal polymerized liposomes comprising a phospholipid bilayer having covalently bonded phospholipids therein, an aqueous core and a vaccine encapsulated in said polymerized liposome.

3. The method of claim 2 wherein said polymerized liposome further comprises a detectable material selected from the group consisting of radiopaque substances, radioactive substances, fluorescent substances, air, magnetic materials, and substances detectable by magnetic resonance imaging.

4. The method of claim 3 further comprising detecting the compound after administration to the animal.

5. The method of claim 2 wherein said vaccine is an antigen and said polymerized liposomes are administered in an amount effective to elicit a humoral, secretory or cell mediated immune response against the antigen.

6. The method of claim 2 wherein said polymerized liposome further comprises an adjuvant.

7. The method of claim 2 wherein said vaccine is selected from the group consisting of viruses, proteins, glycoproteins, nucleic acids, carbohydrates, and lipids.

8. The method of claim 2 wherein said vaccine is selected from the group consisting of peptides, vectors, monosaccharides and polysaccharides.

9. The method of claim 2 wherein said vaccine is an antibody.

10. The method of claim 1 or 2 wherein said polymerized liposome further comprises a targeting molecule selected from the group consisting of antibodies, antibody fragments, antigens and molecules capable of binding to specific cell surface receptors found in the mucosal tissue.

11. The method of claim 1 or 2 wherein said animal is a human.

12. The method of claim 1 or 2 wherein said covalently bonded phospholipid is selected from the group consisting of olefinic or double bond-containing phospholipids, acetylenic phospholipids and phospholipids containing thiol groups.

13. The method of claim 12 wherein said covalently bonded phospholipid bilayer comprises DODPC.

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